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| 10/658,992 | 09/10/2003 | Matthew Towler | 7443 US | 5558 |
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| MATTHEW D. RABDAU TEKTRONIX, INC. 14150 S.W. KARL BRAUN DRIVE P.O. BOX 500 (50-LAW) BEAVERTON, OR 97077-0001 | | | EXAMINER ANYIKIRE, CHIKAODILI E | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---|--|--|
| Office Action Summary | Application No. 10/658,992 | Applicant(s) TOWLER, MATTHEW | |
| | Examiner Chikaodili E. Anyikire | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20040923</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application is responsive to application number (10658992) filed on September 10, 2003. Claims 1-22 are pending and have been examined.

Information Disclosure Statement

2. Acknowledgement is made of applicant's information disclosure statement.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14 rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al (US 6,445,679).

As per **claim 1**, Taniguchi et al disclose a method of monitoring a transport stream of a compressed video signal comprising the steps of:

extracting an information element from the transport stream (Col 8 Ln 25-32);

generating (Fig 2, 21) a message of a predetermined type dependent on the extracted information element (Col 8 Ln 25-32);

assigning a priority to the message, the priority being dependent on a predetermined criticality of the predetermined type to the integrity of the compressed video signal (Col 25 Ln 33-39);

adding the message to a message queue if the priority of the message exceeds a variable threshold priority level (Col 15 Ln 6-16);

adjusting the variable threshold priority level in dependence upon whether a size of the message queue is within a predetermined range to obtain an adjusted variable threshold priority level, discarding messages in the message queue having a priority less than the adjusted variable threshold priority level (Col 17 Ln 17-24); and

analyzing a next message from the message queue according to the predetermined type of the next message (Col 26 Ln 25-36).

As per **claim 2**, Taniguchi et al disclose the method as recited in claim 1 wherein the adjusting step comprises the steps of:

increasing the variable threshold priority level to a higher level as the adjusted variable threshold priority level if a size of the message queue exceeds a predetermined maximum size (Col 18 Ln 17-35);

discarding the messages in the message queue having a priority less than the adjusted variable threshold priority level (Col 27 Ln 62 – Col 28 Ln 4; the prior art shows that higher the priority the lower the value and therefore discards the message if it is lower than the threshold); and

otherwise reducing the variable threshold priority level to a lower level as the adjusted variable threshold priority level if the size of the message queue is less than a predetermined minimum size (Col 18 Ln 17-35).

As per **claim 3**, Taniguchi et al disclose the method as recited in claim 2 wherein the reducing step comprises the steps of:

determining an elapsed time since the level of the variable threshold priority level was last changed (Col 18 Ln 17-35); and

reducing the level of the variable threshold priority level as the adjusted variable threshold priority level if the elapsed time exceeds a predetermined hysteresis time (Col 18 Ln 17-35).

As per **claim 4**, Taniguchi et al disclose the method as recited in claim 1 wherein the analyzing step (Fig 4, 25) comprises the steps of:

registering as to which predetermined types of messages each analyzer module of a plurality of analyzer modules processes (Col 10 Ln 40 – Col 11 Ln 28);

determining the predetermined type of the next message (Col 10 Ln 40 – Col 11 Ln 28); and

dispatching the next message to at least one of the analyzer modules which is registered to process the predetermined type of the next message (Col 10 Ln 40 – Col 11 Ln 28).

As per **claim 5**, Taniguchi et al disclose the method as recited in claim 4 wherein the adjusting step comprises the step of informing each of the analyzer modules which is registered to process the predetermined types of messages when there is a change (Col 10 Ln 40 – Col 11 Ln 28).

As per **claim 6**, Taniguchi et al disclose the method as recited in claim 1 further comprising the step of outputting results of the analyzing step to a user interface (Col 7 Ln 60-61 and Col 8 Ln 25-33).

As per **claim 7**, Taniguchi et al disclose the method as recited in claim 1 further comprising the step of logging results of the analyzing step (Col 8 Ln 25-33).

Regarding **claim 8**, arguments analogous to those presented for claim 1 are applicable for claim 8.

Regarding **claim 9**, arguments analogous to those presented for claim 2 are applicable for claim 9.

Regarding claim 10, arguments analogous to those presented for claim 4 are applicable for claim 10.

As per **claim 11**, Taniguchi et al disclose the apparatus as recited in claim 10 wherein the analyzing means (Fig 4, 251) comprises means for informing respective ones of the analyzer modules of changes in whether messages of the predetermined types registered for processing by the respective analyzer modules are currently being added to the message queue by the adding means (Col 10 Ln 40 – Col 11 Ln 28).

Regarding **claim 12**, arguments analogous to those presented for claim 3 are applicable for claim 12.

reduced by the reducing means if the size of the message queue is less than the predetermined minimum size and the elapsed time exceeds a predetermined hysteresis time.

Regarding **claim 13**, arguments analogous to those presented for claim 6 are applicable for claim 13.

Regarding **claim 14**, arguments analogous to those presented for claim 7 are applicable for claim 14.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 15-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (US 6,445,679) in view of Kaneko et al (US 6,505,347)..

As per **claim 15**, Taniguchi et al disclose the method as recited in claim 1.

However, Taniguchi et al does not explicitly teach identifying from the messages in the message queue a program association table having a list of packet identifiers of program map tables associated with each of a plurality of programs in the transport stream;

generating from the program association table a checklist having members representative of respective ones of the packet identifiers in the program map tables in the transport stream and the associated programs; and

analyzing the messages to detect the program map tables to determine whether for each member of the checklist there is a program map table packet identifier for the associated program.

In the same field of endeavor, Kaneko et al teach identifying (Fig 4, 21) from the messages in the message queue a program association table having a list of packet identifiers of program map tables associated with each of a plurality of programs in the transport stream (Fig 9, Table 3; Col 13 Ln 56-65);

generating (Fig 4, 25) from the program association table (Fig 9, Table 3, PAT; which contains the contents of a PMT) a checklist having members representative of respective ones of the packet identifiers in the program map tables in the transport stream and the associated programs (Fig 17; Col 16 Ln 62 – Col Ln 17 Ln 10; each PMT contains a identifiers in the transport streams, which can be indicated by the version number); and

analyzing (Fig 4, 25) the messages to detect the program map tables to determine whether for each member of the checklist there is a program map table packet identifier for the associated program (Col 14 Ln 32-57).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is

capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 16**, Kaneko et al disclose the method as recited in claim 15 wherein the identifying step comprises the steps of:

detecting (Fig 4, 25) a version change in the program association table from a prior program association table (Col 14 Ln 35-37); and

suspending analysis of the messages for a predetermined period of transport stream time around the program association table in which the version change is detected (Col 14 Ln 32-46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 17**, Kaneko et al disclose the method as recited in claim 15 wherein the identifying step comprises the steps of:

detecting (Fig 4, 25) a version change in the program map table from a prior program map table (Col 14 Ln 35-37); and

suspending analysis of the messages for a predetermined period of transport stream time around the program map table in which the version change is detected (Col 14 Ln 32-46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 18**, Kaneko et al disclose the method as recited in claim 1 wherein the analyzing means comprises the steps of:

identifying (Fig 4, 21) from the messages in the message queue a program association table (Fig 9, Table 3, PAT; which contains the contents of a PMT) having a transport stream identifier and a plurality of program numbers with each of the programs numbers being associated with one of a respective program in the transport stream (Fig 9, Table 3; Col 13 Ln 56-65);

generating from the program association table a checklist of members representative of the respective program numbers (Fig 17; Col 16 Ln 62 – Col Ln 17 Ln 10; each PMT contains a identifiers in the transport streams, which can be indicated by the version numbers);

analyzing the messages to detect a service description table having a transport identifier and a second plurality of program numbers and associated program descriptions (Col 14 Ln 32-57); and

determining whether for each member of the transport stream for the transport stream identifier corresponding to the service description table (Fig 9, Table 3, SDT)

there is a program number and program description in the service description table (Col 14 Ln 32-57).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 19**, Kaneko et al disclose the method as recited in claim 18 wherein the identifying step comprises the steps of:

detecting (Fig 4, 25) a version change in the program association table from a previous program association table (Col 14 Ln 35-37); and

suspending analysis of the transport stream for a first predetermined period of transport stream time around the program association table in which the version change is detected (Col 14 Ln 32-46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 20**, Kaneko et al disclose the method as recited in claim 19 wherein the analyzing step comprises the steps of:

detecting (Fig 4, 25) a version change in the service description table (Fig 9, Table 3, SDT) from a previous service description table (Col 14 Ln 35-37); and
suspending analysis of the transport stream for a second predetermined period of transport stream time around the service description table in which the version change is detected (Col 14 Ln 32-46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 21**, Kaneko et al disclose the method as recited in claim 18 wherein the analyzing step comprises the steps of:

detecting a virtual channel table in the service description table (Fig 9, Table 3, SDT; Col 14 Ln 35-37); and

determining whether for each member of the checklist for the transport stream identifier of the virtual channel table there is a program number and program description in the virtual channel table (Col 14 Ln 35-37).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

As per **claim 22**, Kaneko et al disclose the method as recited in claim 1 wherein the analyzing step comprises the steps of:

identifying from the messages in the message queue a master guide table having a transport stream identifier and a list of event information tables of programs transmitted in the transport stream in consecutive periods of time (Fig 4, 25; Col 13 Ln 56-65);

analyzing the master guide table to determine the presence or absence of a terrestrial transport stream identifier and, if present, the presence or absence of a predetermined number of event information tables including a current event information table of programs currently being transmitted (Col 14 Ln 32-57); and

outputting signals representative of results of the analysis to the user interface (Col 14 Ln 47-67).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Taniguchi et al in view of Kaneko et al. The motivation is to control information generating apparatus for broadcast systems which is capable of altering program control information without interrupting a system operation to output audio/video data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chikaodili E. Anyikire whose telephone number is (571)

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270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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